



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

6449 7590 06/19/2009  
ROTHWELL, FIGG, ERNST & MANBECK, P.C.  
1425 K STREET, N.W.  
SUITE 800  
WASHINGTON, DC 20005

EXAMINER	
BATTULA, PRADDEEP CHOUDARY	
ART UNIT	PAPER NUMBER
3725	
DATE MAILED: 06/19/2009	

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/504,816	08/17/2004	Manfred Heim	2732-139	5582

TITLE OF INVENTION: SECURITY DOCUMENT AND SECURITY ELEMENT FOR A SECURITY DOCUMENT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/21/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

## HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to:** Mail **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax** **(571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

6449 7590 06/19/2009

**ROTHWELL, FIGG, ERNST & MANBECK, P.C.**  
**1425 K STREET, N.W.**  
**SUITE 800**  
**WASHINGTON, DC 20005**

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/504,816 08/17/2004

Manfred Heim

2732-139

5582

TITLE OF INVENTION: SECURITY DOCUMENT AND SECURITY ELEMENT FOR A SECURITY DOCUMENT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/21/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
BATTULA, PRADEEP CHAUDARY	3725	283-085000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_  
3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_  
Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/504,816	08/17/2004	Manfred Heim	2732-139	5582
6449	7590	06/19/2009	EXAMINER	
ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005			BATTULA, PRADEEP CHOUDARY	
			ART UNIT	PAPER NUMBER
			3725	

DATE MAILED: 06/19/2009

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 527 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 527 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

**Notice of Allowability****Application No.**

10/504,816

**Applicant(s)**

HEIM, MANFRED

**Examiner**

PRADEEP C. BATTULA

**Art Unit**

3725

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment April 7, 2009.
2. ☒ The allowed claim(s) is/are 1-15, 17-26, 28-33, 39-41, 43, 45 and 46.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date June 10, 2009.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### **DETAILED ACTION**

**This action is in response to the reply filed on April 7, 2009**

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Brian A. Tollefson on June 15, 2009.

#### ***Drawings***

The following changes to the drawings have been approved by the examiner and agreed upon by applicant: A new drawing 9,(similar to that seen in Figure 8) must be provided with at least one of the absorber layers having a gap and no other layers except the absorber layer(s) having a gap. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

Support for the limitation was found in the specification (specification which is numbered) on page 14, paragraph 0057.

#### ***Specification***

On page 9 of the specification (specification having numbered paragraphs) in paragraph 0037, please delete the "and" in the line reading "Figure 7 shows the layer structure of a security element according to a third embodiment; and"

On page 9 of the specification (specification having numbered paragraphs) in paragraph 0037, please delete the "." in the line reading "Figure 8 shows the layer structure of the security element according to Figure 5 with gaps in the interference element." Please insert -- ; and --.

On page 9 of the specification (specification having numbered paragraphs) in paragraph 0037 please insert a new line between the lines beginning with "Figure 8 shows..." and "The technical explanations" with a new line having wording --Figure 9 shows the layer structure of the security element according to Figure 5 with a gap existing only in one of the absorber layers.---

***Allowable Subject Matter***

Claims 1 – 15, 17 - 26, 28 - 33, 39- 41, 43, 45, and 46 are allowed with Claim 1 being independent and having Claims 2—17, 33, 39, 40, 41, 45, and 46 dependent; Claim 18 being independent and Claims 19 – 26, 28 – 30, and 48 dependent; and Claim 31 being independent and having Claims 32, 33, and 31 dependent.

In regards to Claims 1 and 18, Caporaletti security document, or semi finished product for producing the security document (Column 1, Lines 7 – 8), comprising a substrate 10 Column 3, Lines 9 – 11; Figure 1, Item 10) with first and second opposing substrate surfaces (inherent since every substrate has two surfaces) and a multi-layer security element 30 (Column 3, Lines 20 – 22, 45 – 52; Figure 1, Item 30) the security element is also semitransparent (Column 3, Lines 12 – 13, Column 4, Lines 19 – 29; Figure 3; dielectric layer [at least one] is semitransparent) and is so connected with the substrate that it is visually recognizable at least from one of the two substrate surfaces

(Column 3, Lines 24 – 25; Security element 30 can be considered one element on both sides), wherein the security element includes a multi-layer interference element 52 (Column 4, Lines 22 - 25) producing a color shift effect (Column 2, Lines 51 – 53), a color shift effect produced by the interference element is visually recognizable from both sides of the security element depending on the way of viewing the security element (Column 3, Lines 24 – 25; Column 4, Lines 49 – 61; security element can be on both sides or viewed through a window 32 so visible on both sides).

Caporaletti does not disclose a layer with diffraction structures that at least partly overlaps the interference element, the interference element has gaps in at least one absorber layer, and the diffraction structures directly adjoin the interference element wherein an effect caused by at least one of the diffraction structures.

Bonkowski teaches of a security element that teaches of a color shift optical coating 16 which further comprises an absorber layer 18 and reflective layer 22 (Column 6, Line 65; Column 7, Lines 1 – 3; Figure 1B, Items 18, 22) and further having diffraction structures 15 directly adjoining the interference element (Column 4, Lines 12 – 17, Column 6, Lines 59 – 62; teaches of the diffraction features in invention 10 but similar are done in 30; Figure 1B, Item 15) wherein the diffraction structure has at least one effect (Column 4, Lines 26 – 32). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the additional color shifting features (substrate, reflector and absorber layer) with diffraction structures as taught by Bonkowski in order to provide a color shifting effect element in

order to provide a more robust element which is more difficult to counterfeit (Column 2, Lines 37 – 39)

Caporaletti modified by Bonkowski does not disclose the interference element has gaps in at least one absorber layer.

Phillips teaches of a similar security element as taught by Bonkowski (reflector, dielectric and absorber layers) 116 with a laser ablated image 118 which can take the form of digital images bar codes, covert (microscopic) data and information, or combinations thereof (Paragraph 0091). The laser ablation as taught by Phillips is in all of the interference layers (Fig. 10B). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide information in the form of gaps in the interference element of Caporaletti in order to provide information in the interference element and further enhance the security element.

However the combined elements still do not provide the construction where the only the absorber layer(s) have the gaps. Phillips teaches of the gaps but clearly discloses that the gaps are present in all layers of the element. Particular layers cannot be chosen to only have the gap as this is required by the particular structure of Phillips interference element and therefore there is no teaching that the gaps could only be in the absorber layers. Such a modification in view of obviousness with Phillips would be hindsight. Further Bonkowski's element is similar to that of Phillips so the modification of that element is appropriate.

In regards to Claim 31, Caporaletti modified by Bonkowski and Phillips does not disclose wherein the interference element includes a first absorber layer, a dielectric



layer adjoining and overlying the first absorber layer and a second absorber layer adjoining and overlying the dielectric layer and wherein the layers constituting the interference element are vapor-deposited and wherein the gaps are in the form of signs, patterns or encodings.

Argoitia teaches of a security element comprised of a series of security foils creating an interference element (Paragraph 0059; foils applied to a substrate making an element; Paragraph 0096) wherein the layers of the interference element have diffraction structures overlapping wherein an effect is caused by at least one of the diffraction layers (Paragraph 0097; Paragraph 0098). Argoitia teaches the interference element includes a first absorber layer, a dielectric layer adjoining and overlying the first absorber layer and a second absorber layer adjoining and overlying the dielectric layer (Paragraph 0174) and wherein the layers constituting the interference element are vapor-deposited (Paragraph 0067). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the additional layers to Bonkowski's interference elements with the methods as taught by Argoitia in order to allow for other embodiments of Bonkowski to be produced with the same method (Column 4, Lines 62 – 67 teach of vapor deposition for one embodiment). Furthermore, color shifting is further well known in the art with such layers (Phillips; U.S. 5,214,530)

Caporaletti modified by modified by Bonkowski and Argoitia does not disclose wherein the gaps are in the form of signs, patterns, or encodings.

Phillips teaches of a similar security element as taught by Bonkowski structure with 116 with a laser ablated image 118 which can take the form of digital images bar codes, covert (microscopic) data and information, or combinations thereof (Paragraph 0091). The laser ablation as taught by Phillips is in all of the interference layers (Fig. 10B). Therefore it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to substitute the security element of Caporaletti modified by Bonkowski and Argoitia with ablated laser codings in as taught by Phillips to provide banknotes and the like with a color shift effect viewable from both sides of the reflective element and laser etching (gaps) to further enhance security.

However the combined elements still do not provide the construction where the only the absorber layer(s) have the gaps. Phillips teaches of the gaps but clearly discloses that the gaps are present in all layers of the element. Particular layers cannot be chosen to only have the gap as this is required by the particular structure of Phillips interference element and therefore there is no teaching that the gaps could only be in the absorber layers. Such a modification in view of obviousness with Phillips would be hindsight. Further Bonkowski's element is similar to that of Phillips so the modification of that element is appropriate.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRADEEP C. BATTULA whose telephone number is (571)272-2142. The examiner can normally be reached on Mon. - Thurs. & alternating Fri. 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached on 571-272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. C. B./  
Examiner, Art Unit 3725  
June 15, 2009

/Dana Ross/  
Supervisory Patent Examiner, Art Unit 3725